

Remarks

Introductory Comments

Applicant has amended Claims 1, 7, and 8 but added no Claims. No fee is due. If the Office disagrees, it is authorized to charge Deposit Account No. 07-1077 for the amount. Support for the amendment to these Claims 1, 7, 8 is found in Applicant's Specification at Page 4, Lines 1-13 (Paragraphs [0017] – [0018] of Applicant's Publication US2007/0034835).

Applicant appreciates the recognition by the Office that his prior amendment and remarks overcame the prior rejections.

§102(b)/103 Rejection Using Neste et al. and §102(e)/103 Rejection Using Viswanathan et al.

These new rejections have one thing in common. Neither Neste et al. nor Viswanathan disclose or suggest the use of a plastisol.

To assist the Office in an understanding of the structure and rheology of a plastisol, Applicant provides an excerpt from Sarvetnick, Ed. Plastisols and Organosols (Robert E. Krieger Publishing Company, 1983) p. 1. As stated, plastisols are a unique liquid form of vinyl compound in an unprocessed state. The suspension or dispersion of resin in a liquid plasticizer, after coating or molding, is converted into a solid coating or molded article via exposure to heat. The resin fuses during heating and then cools into a flexible polymer product with little or no shrinkage.

Applicant has amended his Claims 1, 7, and 8, with support from his specification, to explain the plastisol of his claimed mixture and resulting products.

Neste et al. at Page 7 describes their Substituted Compound as being both a “solvent-plasticizer” of the conductive polyaniline complexes and a “compatibilizer” for blends of the conductive polymer with other polymer or pre-polymers. Neste et al. does not describe or suggest what Applicant has invented: a dispersion of inherently conductive polymer and graphite in a plastisol, where the plastisol itself is a liquid at room temperature of resin dispersed in a plasticizing liquid.

As Applicant explains in his specification at Table 2, the resulting structure and rheology of his claimed mixture is a liquid dispersion which, as explained at Page 4 at lines 6-11, can be poured, pumped, sprayed, or cast into any number of ultimate

shapes. As explained at Page 5, line 24, all of the advantages inherent in a conventional plastisol, with Applicant's invention, can now be expanded to include electrically activity or static dissipation because of the addition of inherently conductive polymer and graphite to the plastisol.

It is not obvious to one skilled in the art reading Neste et al. that inherently conductive polymer and graphite can adequately be dispersed into a plastisol of resin dispersed in a plasticizing liquid. The test results in Table 2 show three different successful formulations of Applicant's invention. In hindsight, Applicant's invention may *appear* to be obvious. But nothing in Neste et al. can be found to describe or suggest that a Substituted Compound is or could be a plastisol.

The same situation exists with Viswanathan et al. At Col. 8., lines 40-43, Viswanathan et al. teach that the resins of the invention can be water-borne or organic solvent-borne. A plastisol is neither. The resin is plasticizer-borne. It is intended that the plasticizer remain upon fusing and cooling of the resin into the ultimate shape. Nothing in Viswanathan et al. discloses or suggests Applicant's invention of a plastisol having dispersed therein both inherently conductive polymer and graphite.

Conclusion

Applicant requests a Notice of Allowance for all pending claims. If there is any matter remaining unresolved, the Office is encouraged to contact the undersigned by telephone.

Respectfully submitted by:

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Date

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PLASTISOLS AND ORGANOSOLS

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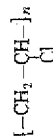


ROBERT E. KRIEGER PUBLISHING COMPANY
MALABAR, FLORIDA
1983

Plastisols are a unique liquid form of "vinyl" compound in the unprocessed state. Their introduction has been responsible for the development of a number of completely new low cost processing techniques, which are described in later chapters.

A plastisol is a suspension of PVC resin in a liquid plasticizer to produce a fluid mixture which may range in viscosity from a pourable liquid to a heavy paste. This fluid may be spread onto a substrate, poured into a mold, sprayed onto a surface, etc. The plastisol is converted into a homogenous "vinyl" product through exposure to heat, e.g., 350° F., depending on the specific ingredients used. The heat causes the suspended resin to be "fused" or dissolved in the plasticizer. Upon cooling, a flexible vinyl product (depending on the recipe used) is formed, with little or no shrinkage. The addition of solvent to a plastisol for reduction of viscosity is common practice, particularly for coatings applications. This mixture is referred to as an organosol. The solvent is evaporated prior to fusion.

The resin ingredient is polyvinyl chloride, or a vinyl chloride copolymer, e.g., a vinyl chloride-vinyl acetate copolymer. Unplasticized polyvinyl chloride is a rigid polymer with the following chemical configuration:



"PVC" and "vinyl" are often used broadly to refer to both the homopolymer and the copolymer as well as to compounds containing the polymer or copolymer.

Plastisol and organosol usage of PVC resin represents about one-fourth of the total use of PVC resin. The major portion of PVC resin is manufactured in a large particle size which is not generally suitable for plastisols, although special grades of this larger particle size resin can be added to plastisols to a limited